

REMARKS/ARGUMENTS

I. Disposition of Claims

Claims 1, 6, 30-35, 37, 39, 40, 73, 74, 77, 85, 93, 94, 97, 98, and 114-116 are pending and all claims currently stand rejected.

II. Claim Rejections -- 35 U.S.C. §103(a), Claims 1, 6, 30-35, 37, 39, 40, 73-74, 77, 93-94, and 14-115

Claims 1, 6, 30-35, 37, 39, 40, 73-74, 77, 93-94, and 14-115 are rejected under 35 U.S.C. §103(a) as being unpatentable over Hiroshi et al. (JP 06-256728A, hereinafter referred to as “**Hiroshi**”) in view of Sang et al. (USPN 5039559, hereinafter referred to as “**Sang**”) and Sugarbaker et al. (Improved Detection of Focal Lesions with Computerized Tomographic Examination of the Liver Using Ethiodized Oil Emulsions (EOE-13) Liver Contrast, hereinafter referred to as “**Sugarbaker**”). Claims 1, 73, 77, and 85 are independent claims. The Applicants respectfully traverse these rejections for the following articulated reasons:

II.A. Mistaken Assumptions Preclude the Ability to Effectively Argue that the Differences Between the Prior Art and the Claimed Invention are Obvious in Light of the Art

The Applicants respectfully argue that the Examiner has not properly explained how differences between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art. The USPTO’s new Examination Guidelines state (ref: Section III, page 57528, Federal Register, Vol. 72, No. 195):

... Office personnel must explain why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art.

Because of several mistaken assumptions, as set forth below, the Examiner has not adequately explained why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art, and thus, the rejection is unsupported by the art and should be withdrawn.

The Applicants' have interpreted from June 14, 2007 Office action (hereinafter referred to as "**the Office action**") that the Examiner has erred in a critical assumption in regards to **Hiroshi**. **Hiroshi** teaches a preferred embodiment whereby a matrix (commonly referred to as a "material" in **Hiroshi**) formed of a ferromagnetic material wherein microcapsules are contained in the matrix (ref: **Hiroshi**: Abstract; paragraph [0002]; paragraph 0008]). **Hiroshi** teaches an alternative embodiment whereby microcapsules are covered by ferromagnetic material (ref: **Hiroshi**: Operation, paragraph [0009], last sentence). The Examiner states in **the Office action** that "Hiroshi et al. teaches a breakable microcapsule comprising a ferromagnet." (emphasis added) (ref: **the Office action**: page 3, line 3). However, it appears that the Examiner is extending **Hiroshi**'s disclosure to encapsulated ferromagnetic particles in a microcapsule. The Applicants strenuously underscore that **Hiroshi** does not teach or suggest a microcapsule with encapsulated ferromagnetic material or particles. In direct contrast, **Hiroshi** teaches (1) a matrix comprising (2) a ferromagnetic material wherein (3) microcapsules are contained in the matrix structure or alternatively, covered with the ferromagnetic material. **Hiroshi**'s microcapsules do

not encapsulate ferromagnetic materials of any kind. The Examiner's interpreted mistake is understandable considering the poor translation of **Hiroshi**'s patent, which is a Japanese patent. However, the mistaken assumption is a critical fallacy in the Examiner's obviousness argument per the use of **Hiroshi** as the primary reference. Specifically, the Examiner has not properly articulated how the lack of encapsulated trigger particles in **Hiroshi** results in an obviousness argument as to the Applicants' claimed invention. And therefore, the Examiner has not properly explained how differences between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art because it appears that the Examiner's arguments are based on an incorrect assumption as to the primary reference.

The Examiner has also made a mistaken assumption as to **Sang**. The Examiner states that, "The reference [**Hiroshi**] fails to teach a plurality of internal immiscible liquid phases and a coencapsulate surround the magnetic particles. Sang et al. teaches ceramic particles of below 100 microns in diameter containing an inert liquid immiscible phase ..." (ref: **the Office action**, page 3, lines 17-20) **Sang** does not teach a ceramic particle or ceramic coated magnetic particle containing an inert liquid phase. **Sang** uses an emulsification process to create a magnetic material (ref: **Sang**: Col. 2, lines 45-58). Specifically, **Sang** uses a combination of immiscible liquids to create droplets of gels whereby upon heating, the droplets of gels solidify to form magnetic particles. The resultant magnetic particles are solid and do not contain any liquid.

Therefore, because of the Examiner's errors in light of **Hiroshi** and **Sang**, the Examiner has not properly explained how differences between the prior art and the claimed invention

would have been obvious to one of ordinary skill in the art. Thus, the Applicants traverse the Examiner's rejections and respectfully argue that a *prima facie* case of obviousness has not been established.

II.B Teaching Away

Hiroshi teaches away from the Examiner's proposed combination. Specifically, MPEP §2145 states:

It is improper to combine references where the references teach away from their combination.

Because from the facts derived from **Hiroshi**, as set forth below, the **Hiroshi** teaches away from their combination, the rejection is unsupported and should be withdrawn.

To understand the function of **Hiroshi**'s magnetic material, one must look at the problem **Hiroshi** is attempting to solve. **Hiroshi** is attempting to deliver adhesive substances to the surface of target or adherend (ref: **Hiroshi**, paragraph [0004]-[0005]). The adhesive substance incorporates microcapsules that contain curing agents. By separating the curing agent from the remainder of the adhesive substance components, the "shelf life" or storage stability of the overall adhesive is greatly increased. Conventionally, the curing agent is activated by a hot blast (ref: **Hiroshi**, paragraph [0003]). However, the hot blast often damages the surface of the adherend to which the adhesive is to be delivered, because the adherend often has a low thermal resistance (e.g., plastics) (ref: **Hiroshi**, paragraph [0004]). Thus, **Hiroshi** has developed a matrix

formed of a ferromagnetic material. **Hiroshi** uses this matrix to store the microcapsules, which contain the curing agents. The matrix will absorb most of the thermal load from the “hot blast,” wherein the matrix acts as a shield and thereby spares the adherend (ref: **Hiroshi**, paragraph [0007]). In addition, since the microcapsules are contained within the matrix, the absorption of the heat by the matrix will destroy the microcapsules. As stated *supra*, **Hiroshi** does not teach or suggest encapsulating magnetic material in a microcapsule. Such a configuration would not solve **Hiroshi**’s problem of protecting an adherend from the required “hot blast” while simultaneously releasing a curing agent. Specifically, the small surface area involved with submicron sized magnetic particles encapsulated in a microcapsule would not serve as an effective shield to protect an adherend from the required “hot blast.” Thus, **Hiroshi** teaches away from the Applicants’ claimed invention. Irrespective that **Hiroshi**’s magnetic material is not part of his microcapsule, **Hiroshi**’s magnetic material is being used for a very different function (i.e., as a shield) as compared to the Applicants’ energy absorbing trigger particles (i.e., as a release catalyst).

Therefore, the Applicants traverse the Examiner’s rejections and respectfully argue that a *prima facie* case of obviousness has not been established because **Hiroshi** teaches away from the subject combination.

II.C Some Teaching, Suggestion, or Motivation in the Prior Art That Would Have Led One of Ordinary Skill To Modify the Prior Art Reference To Combine Prior Art Reference Teachings To Arrive at the Claimed Invention

Although, a teaching, suggestion, or motivation (TSM) is no longer a requirement for arguing an obviousness rejection, the lack of a TSM in the prior art can be used in combination with other arguments and secondary evidence to establish nonobviousness. MPEP §2143.01 provides:

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggest the desirability of the combination.

The Applicants submit the following comments and arguments.

First, as stated *supra*, **Sang** teaches a method for making a coated magnetic particle. The Examiner mistakenly states in **the Office action** that “Sang et al. teaches ceramic particles of below 100 microns in diameter containing an inert liquid phase.” (emphasis added) (ref: **the Office action**, page 3, lines 19-20) Notwithstanding that it is inapplicable to the subject patent application, **Sang** does not teach a ceramic particle or ceramic coated magnetic particle containing an inert liquid phase. **Sang** uses an emulsification process to create a magnetic material (ref: **Sang**: Col. 2, lines 45-58). Specifically, **Sang** uses a combination of immiscible liquids to create droplets of gels whereby upon heating, the droplets of gels solidify to form magnetic particles. The resultant magnetic particles are solid and do not contain any liquid. The Examiner uses the mistaken understanding of **Sang**’s invention to formulate a misguided motivation argument in relation to the Applicants’ claims. Specifically, the Examiner states,

“It would have been obvious to one of ordinary skill in the art to incorporate a plurality [of] internal immiscible liquid phases and coat the magnetic particles. The motivation to make such

an incorporation is because Sang et al. teaches that multiple emulsions such as water and oil in water emulsion are more stable (meeting limitation of claims 93 and 94)(col 5 lines 30-60) and coating the magnetic particles are used to avoid contamination of the biological media with the inner potentially toxic core.” (emphasis added) (ref: **the Office action**, page 4, lines 10-15)

The Applicants do not claim incorporating a plurality of internal immiscible liquid phases to coat magnetic particles. Further, the Applicants do not claim a method of making a coated magnetic particle. Thus, the Examiner’s motivation statement is curious and inapplicable to the subject patent application. Further, as the Examiner states, **Sang** proposes coating magnetic particles “to avoid contamination of the biological media with the inner potentially toxic core [of the magnetic particle.” **Sang**’s coating serves a different function as compared to the claimed invention (wherein the coating is to protect the magnetic particle from oxidation effects and not protect the biological media from contamination) (ref: Applicants’ Specification, paragraph [xxx], page n). Rationale A of the new Examination Guidelines provides that if the function of an element in the prior art is different from the function of the similar element in the claimed invention, differences in the prior art and the claimed invention may not be obvious. In sum, neither **Hiroshi, Sang**, nor **Sugarbaker** teach or suggest encapsulating one or more energy absorbing trigger particles in an internal liquid phase all within a flexible polymer outer membrane. Hence, it is correspondingly understandable that neither **Hiroshi, Sang**, nor **Sugarbaker** teach or suggest a motivation for combining the elements of a flexible outer polymer membrane that encapsulates one or more energy absorbing trigger particles in an internal liquid phase. Therefore, because there is no actual or suggested motivation to combine

these references in a manner that would read upon the Applicants' claims, the Applicants traverse the Examiner's rejection and respectfully argue that a *prima facie* case of obviousness has not been established.

II.D References are not Properly Combinable or Modifiable if the Primary Reference's Intended Function is Destroyed and Proposed Modification Cannot Change the Principle of Operation of the Primary Reference

The combination or modification of the references in the manner suggested by the Examiner would render the primary reference inoperable for its intended purpose. MPEP §2143.01 states:

If [the] proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.

Further, the combination or modification of the references in the manner suggested by the Examiner would change the principle of operation of the primary reference. MPEP §2143.01 states:

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.

Because from the facts derived from the references, as set forth below, the suggested combination or modification would render the primary reference inoperable for its intended

purpose and change the principle of operation of the primary reference, the rejection is unsupported by the art and should be withdrawn.

The primary reference is **Hiroshi**. Incorporating internal magnetic particles in **Hiroshi**'s microcapsules would render the invention inoperable for its intended purpose and change the principle of operation of the primary reference (i.e., to protect the adherend from heat and pressure loads associated with his thermal "hot blast"), because the small size of particles encapsulated in a microcapsule would not provide enough surface area to absorb the thermal loads necessary to protect an adherend.

Therefore for the reasons articulated above, the Applicants traverse the Examiner's subject rejections and respectfully argue that a *prima facie* case of obviousness has not been established.

III. Claim Rejections -- 35 U.S.C. §103(a), Claims 85, 97, 98, and 116

Claims 85, 97, 98, and 116 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Hiroshi** in view of **Sang** as applied to Claims 1, 6, 30-35, 37, 39, 40, 73-74, 77, 93-94, 114-115 above and in further view of **Borrmann et al.** (DE 19606804 A1, hereinafter referred to "**Borrmann**"). The Applicants have amended Claims 85, 97, 98, and 116. With respect to the amended claims, the Applicants respectfully traverse the rejections and argue that the Examiner has not established a *prima facie* case of obviousness for the following reasons.

III.A Amendment of the Claims from Product to Method Claims and No Teaching, Suggestion, or Motivation in the Prior Art

The Applicants have amended the subject claims from product or composition claims to method claims. The specific method step of applying an energy source to one or more microcapsules in order to increase the temperature of at least one encapsulated energy absorbing particle sufficient to melt a polymer outer membrane is not taught or suggested by **Hiroshi, Sang, or Borrmann**. **Hiroshi** and **Sang** were discussed *supra* and will not be re-discussed for efficiency purposes.

With respect to **Borrmann**, it is noted that **Borrmann** describes a general method with a preferred embodiment, which does not teach or suggest melting a portion of an outer polymer membrane. As the Examiner states on page 5, lines 13-16 in **the Office action**, **Borrmann's** preferred embodiment is micromechanically-based. (ref: **Borrmann**, page 3, lines 1-3) **Borrmann's** preferred method uses an externally applied magnetic field to change a structural formation of magnetic particles, thereby stretching the wall of a microsphere until "mechanically" breaking said wall. (emphasis added) (ref: **Borrmann**, page 3, lines 4-7) In particular, **Borrmann** begins with a set of magnetic particles in the form of a ring. (ref: **Borrmann**, page 3, lines 15-16; FIG. 1) Next, **Borrmann** applies a magnetic field, which changes the structural formation of the initial ring into a linear chain. As **Borrmann** describes it, the "thorn-like" linear chain's length is greater than the microsphere's diameter. The result is

that the microsphere's wall is torn by the linear chain of magnetic particles. (ref: **Borrmann**, page 3, lines 16-23; page 4, lines 1-3; page 4, lines 30-34).

In addition to the specific preferred method, **Borrmann** also teaches a general method. **Borrmann**'s general method uses either pressure or a physical movement of the magnetic particles to tear the wall of a microsphere. (ref: **Borrmann**, page 2, lines 33-36). **Borrmann** admits that there are problems with his method. Specifically, there is no guarantee that a single linear chain will form. (ref: **Borrmann**, page 5, lines 3-4) The Applicants' method does not depend on a specific structural arrangement for energy absorbing particles because the Applicants use energy absorption to heat the particles above the melting point of a microcapsule's outer polymer membrane (ref: Application 11/423,038: paragraph 15, page 7). **Borrmann** never teaches or implies melting the outer wall of a microcapsule. **Borrmann** is not concerned with heating his magnetic particles and his process does not implicitly heat his magnetic particles because his process is based on ferro- or paramagnetism and not electromagnetic induction. **Borrmann** simply desires to expose ferro- or paramagnetic particles to an external magnetic field long enough for the particles to exhibit magnetic properties. In direct contrast, the Applicants are exposing a material to an energy source long enough to increase its temperature such that its desired temperature is high enough to melt an outer polymer membrane of a microcapsule. Again, **Borrmann** is focused on using a micro-mechanical action to create an exit point in a microcapsule. The function of using an energy absorbing trigger particle to melt a polymer outer membrane of a microcapsule to release the contents of the

microcapsule has not been articulated by the combination of **Hiroshi, Sang, and Borrmann**. **Borrmann** does not teach or suggest an increase in temperature (which results from electromagnetic induction and not ferro- or paramagnetism) of one or more magnetic particles to melt at least a portion of a polymer outer membrane. **Hiroshi** is not concerned with releasing the contents of microcapsules from an internal source. **Hiroshi** exposes his microcapsules to an external “hot blast” due to **Hiroshi**’s unique problem, which is discussed *supra*. Furthermore, if one follows the teachings of **Hiroshi, Sang, and Borrmann**, it is not possible to achieve the Applicants’ method claims in form or function.

The Applicants recognize that a teaching, suggestion, or motivation (TSM) in the prior art is no longer a requirement for an obviousness conclusion based on the USPTO’s new Examination Guidelines. However, the Applicants argue that a lack of a TSM in the prior art, as part of an aggregation of other substantive arguments (such as the arguments presented in this paper), can reasonably result in a nonobvious conclusion.

Further, neither **Hiroshi, Sang, nor Borrmann** teach or suggest the use of radiofrequency, microwave, or ultrasound energy as a means for activating the release of an encapsulated substance. Because this particular claim element previously included “magnetic” energy in an alternative format (i.e., the use of the conjunction “or”), the Applicants have amended all independent claims to delete the specific absorption rate element as related to magnetic energy. Hence, since neither **Hiroshi, Sang, nor Borrmann** teach or suggest the use

of radiofrequency, microwave, or ultrasound energy, these references do not teach or suggest all the claim elements in their amended form.

Therefore, the Applicants traverse the Examiner's rejection and respectfully argue that a *prima facie* case of obviousness has not been established.

III.B References are not Properly Combinable or Modifiable if the Primary Reference's Intended Function is Destroyed

Because from the facts derived from the references, as set forth below, the suggested combination or modification would render the primary reference inoperable for its intended purpose, the rejection is unsupported by the art and should be withdrawn.

The primary reference is **Hiroshi**. **Hiroshi**'s motivation for using magnetic materials is for shielding purposes. Therefore, for **Hiroshi** to incorporate magnetic particles in his microcapsules, **Hiroshi** would only do this for shielding purposes. Incorporating internal energy absorbing particles would render **Hiroshi**'s invention inoperable for its intended purpose (i.e., to protect the adherend from heat and pressure loads associated with his thermal "hot blast"), because the small size of particles encapsulated in a microcapsule would not provide enough surface area to absorb the thermal loads necessary to protect an adherend.

Therefore, the Applicants traverse the Examiner's rejections and respectfully argue that a *prima facie* case of obviousness has not been established.

II.C Proposed Modification Cannot Change the Principle of Operation of the Primary Reference

The combination or modification of the references in the manner suggested by the Examiner would change the principle of operation of the primary reference. MPEP §2143.01 states:

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.

Because from the facts derived from the references, as set forth below, the suggested combination or modification would change the principle of operation of the primary reference, the rejection is unsupported by the art and should be withdrawn.

The primary reference is **Hiroshi**. Incorporating internal magnetic particles in a microcapsule as opposed to an external matrix would change the principle of operation of **Hiroshi's** invention (i.e., to protect the adherend from heat and pressure loads associated with his thermal "hot blast"), because the small size of particles encapsulated in a microcapsule would not provide enough surface area to absorb the thermal loads necessary to protect an adherend.

Therefore, the Applicants traverse the Examiner's rejections and respectfully argue that a *prima facie* case of obviousness has not been established.

III.D Unpredictable Results

A Rule 132 Declaration is filed contemporaneously with this paper. As stated in the Rule 132 Declaration, the method of heating magnetic particles to a temperature high enough to melt

an outer polymer membrane of a microcapsule would predictably cause widespread tissue damage upon the release of the heated magnetic particles into surrounding tissue. However, actual experimentation determined that widespread tissue damage did not occur. This result was unpredictable by a person of ordinary skill in the art and partially explains why the prior art does not disclose the specific combination of using energy in combination with energy absorbing trigger particles to melt an outer polymer membrane of a microcapsule and correspondingly release heated energy absorbing trigger particles into surrounding tissue. It is further argued that the unpredictability of this particular result would persuade a person of ordinary skill in the art to not attempt the Applicants' method due to a lack of a reasonable expectation of success.

III.E. Secondary Considerations Presented in the Contemporaneously Filed Declaration

The Applicants present secondary considerations in the contemporaneously filed Rule 132 Declaration for the Examiner's consideration. In addition to the unpredictable results discussed *supra*, the Declaration provides evidence as to: (1) a long felt need; (2) attempts by those skilled in the art to fill an unsatisfied need; and (3) acquiescence by industry to the patent application's validity by honoring the application through taking a license.

III.F. Teaching Away

The arguments presented in section II.B of this paper are herein incorporated by reference.

Therefore, the Applicants invite the Examiner to re-consider this rejection in light of the Applicants' amendments and arguments. With respect to the amended claims, the Applicants traverse the Examiner's rejections and respectfully argue that a *prima facie* case of obviousness has not been established with respect to **Hiroshi** in view of **Sang** and in further view of **Borrmann** because: (1) there is no TSM in the prior art to combine prior art references and arrive at the Applicants' claimed invention; (2) the proposed combination would destroy the primary reference's intended function; (3) the proposed combination would change the principal operation of the primary reference; (4) the Applicants' claimed invention yielded unpredictable results based on actual experimentation; (5) substantive secondary considerations have been provided in a Rule 132 Declaration as further evidence of nonobviousness; and (6) **Hiroshi** teaches away from the proposed combination.

IV. Double Patenting Rejection -- USPN 5,827,531

Claims 1 and 32 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claims 44, 83, and 84 of USPN 5,827,531 to Morrison et al. (hereinafter referred to as "**Morrison**").

First, it is noted that Claim 32 is a dependent claim that traces its dependency to Claim 1. It is further noted that Claims 1, 73, 77, and 85 are the independent claims in the present patent

application. The Applicants will accept **the Office action** at face value and respond to this rejection as applicable to Claims 1 and 32.

Second, the Examiner does not provide any specific rationale as to why the Examiner concludes, “It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate a similar microcapsule used for the same purposes.” M.P.E.P. §804.2.B.1. states:

“Any obviousness-type double patenting rejection should make clear:

- (A) The differences between the inventions defined by the conflicting claims - a claim in the patent compared to a claim in the application; and
- (B) The reasons why a person of ordinary skill in the art would conclude that the invention defined in the claim at issue is anticipated by, or would have been an obvious variation of the invention defined in a claim in the patent.”

Further, the Examiner provided Form paragraph 8.33 found in M.P.E.P. §804, which is clearly defined as a “Heading” Only. The M.P.E.P. states that:

“Form paragraph 8.33 and the appropriate one of form paragraphs 8.34-8.37 may be used to make non-statutory rejections of the obvious type.”

Because no secondary reference was cited by the Examiner, the inclusion of Form paragraph 8.34 would have been served the best interests of the present prosecution. Form paragraph 8.34 has a “space-holder” for a rationale as to why the Examiner believes the alleged conflicting claims are not patentable distinct from each other. The Applicants have prepared the

following "claim chart," that compares the claims cited verbatim by the Examiner in a "side-by-side" manner, wherein Claim 1 is in its previous form.

Morrison Claim 44	Application 09/079,758 Claim 1
A multi-layered microcapsule, comprising:	A microcapsule comprised of:
a first layer comprising a first solvent, a first microcapsule layer-forming compound soluble in said first layer and immiscible with a second layer, a co-solvent, oil, and water;	a plurality of internal, immiscible liquid phases;
said second layer immiscible with said first layer,	
said second layer comprising a second solvent,	
a second microcapsule layer-forming compound soluble in said second layer and immiscible with said first layer	
a surface active agent,	
and a salt;	
said surface active agent having a hydrophilic/lipophilic balance value greater than that of said first microcapsule layer-forming compound;	
said second microcapsule layer-forming compound having a hydrophilic/lipophilic balance value lower than that of said surface active agent.	
	a flexible polymer outer membrane encapsulating the liquid phases, the polymer outer membrane having a melting temperature;
The microcapsule of claim 44 further comprising a magnetic resonance contrast agent.	
The microcapsule of claim 83 wherein said contrast agent is selected from the group of metallo-organic compounds consisting of ferrous gluconate, Gadolinium diethylenetriamine pentaacetic acid, and iron pentacarbonyl.	
	one or more energy absorbing trigger particles contained in an internal liquid phase in contact with the polymer outer membrane,
	wherein the one or more energy absorbing trigger particles are co-encapsulated with the plurality of internal, immiscible liquid phases by the flexible polymer outer membrane,
	wherein the one or more energy absorbing trigger particles sediment in the internal liquid phase in contact with the polymer outer membrane,

	wherein at least one of the one or more energy absorbing trigger particles are in contact with the polymer outer membrane,
	wherein the one or more energy absorbing trigger particles have a higher specific absorption rate for radiofrequency, microwave, or ultrasound energy than the specific absorption rate of the polymer outer membrane, and
	wherein the temperature of the one or more energy absorbing trigger particles is increased by absorbing the energy to melt at least a portion of the polymer outer membrane.

The claim chart clearly illustrates significant and substantive differences between **Morrison** and the subject patent application. **Morrison** discloses a microcapsule designed for a controlled-release means via diffusion over a period of time. The microcapsule in the subject patent application is designed for immediate burst release. The two microcapsules are designed for two entirely different release scenarios. It is unreasonable for the Applicants to attempt to “read the Examiner’s mind” and try to discern why the Examiner believes the claims are not patentable distinct from each other in light of the obvious significant and substantive structural differences between these claims. And therefore, any attempt by the Applicants to respond to this particular rejection would be based on mere speculation as to the Examiner’s thoughts.

Because the Examiner did not provide specific rationale as to why it is argued that the Applicants’ claim is obvious over the referenced **Morrison** claim, the Applicants must respectfully traverse the Examiner’s rejection in light of the fact that a *prima facie* case of a nonstatutory obviousness-type double patenting rejection has not been established.

V. Double Patenting Rejection -- USPN 6,099,864

Claims 1 and 32 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claims 1, 7, 8, 11, 14, 38, and 43 of USPN 6,099,864 to Morrison et al. (hereinafter referred to as “**Morrison II**”). The **Morrison II** claim explicitly cited by the Examiner in **the Office action** is Claim 1.

As with the Examiner’s previous Double Patenting rejection, the Examiner provides no arguments as to the underlying rationale associated with why the Examiner reaches the conclusion that “it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate a similar microcapsule used for the same purposes.”

The Applicants have developed the following claim chart to illustrate significant and substantive differences between the two claims cited verbatim in **the Office action**, wherein Claim 1 is in its previous form.

Morrison II Claim 1	Application 09/079,758 Claim 1
A method of in situ activation of a drug comprising:	
providing a microcapsule	A microcapsule comprised of:
wherein the microcapsule comprises two or more internal liquids, wherein each internal liquid is immiscible with the other internal liquids,	a plurality of internal, immiscible liquid phases;
in an amount effective to promote physical mixing of the immiscible liquid phases and to increase the activation kinetics of activation of the drug precursor.	
and all of the internal liquids are enclosed together in a single polymer shell,	a flexible polymer outer membrane encapsulating the liquid phases, the polymer outer membrane having a melting temperature;
a drug precursor associated with at least one internal liquid phase; and	

exposing the microcapsule to an energy source	[not specifically claimed, but related]
[wherein the energy source is] in an amount effective to promote physical mixing of the immiscible liquid phases and	
[wherein the energy source is in an amount effective] to increase the activation kinetics of activation of the drug precursor.	
	one or more energy absorbing trigger particles contained in an internal liquid phase in contact with the polymer outer membrane,
	wherein the one or more energy absorbing trigger particles are co-encapsulated with the plurality of internal, immiscible liquid phases by the flexible polymer outer membrane,
	wherein the one or more energy absorbing trigger particles sediment in the internal liquid phase in contact with the polymer outer membrane,
	wherein at least one of the one or more energy absorbing trigger particles are in contact with the polymer outer membrane,
	wherein the one or more energy absorbing trigger particles have a higher specific absorption rate for radiofrequency, microwave, or ultrasound energy than the specific absorption rate of the polymer outer membrane, and
	wherein the temperature of the one or more energy absorbing trigger particles is increased by absorbing the energy to melt at least a portion of the polymer outer membrane.

The claim chart clearly illustrates significant and substantive differences between **Morrison II** and the subject patent application. **Morrison II** discloses a microcapsule designed for a controlled-release means via diffusion over a period of time and the mixing of two or more immiscible liquid phases, one of the liquid phases containing a drug precursor. In direct contrast, the microcapsule in the subject patent application is designed for immediate burst release. The two microcapsules are designed for two entirely different release scenarios. **Morrison II** is not

concerned with burst release and thus, there is no suggestion or motivation to combine energy absorbing trigger particles with **Morrison II**'s invention. **Morrison II** does utilize an energy source, but such use is for an entirely different function as compared to the claimed invention. **Morrison II** is using an energy source to promote internal mixing and not in a method to promote a burst release of a microcapsule. It is unreasonable for the Applicants to attempt to "read the Examiner's mind" and try to discern why the Examiner believes the claims are not patentable distinct from each other in light of the obvious significant and substantive structural differences between these claims. And therefore, any attempt by the Applicants to respond to this particular rejection would be based on mere speculation as to the Examiner's thoughts.

Because the Examiner did not provide specific rationale as to why it is argued that the Applicants' claim is obvious over the referenced **Morrison** claim, the Applicants must respectfully traverse the Examiner's rejection in light of the fact that a *prima facie* case of a nonstatutory obviousness-type double patenting rejection has not been established.

VI. Conclusion

The Applicants submit that this paper is fully responsive to **the Office action**.

The Commissioner is hereby authorized to charge any fee which may be required, or credit any overpayment, to Deposit Account No. 14-0116.

Respectfully submitted,

Date: 12/14/2007

By Theodore Ro

Theodore Ro, Reg. No. 52,168
Attorney for Applicants

NASA Johnson Space Center/AL
NASA Parkway
Houston, TX 77058
Telephone: 281-244-7148
Datafax: 281-483-6936